ATTACHMENT 1

OXC 5361/A

att #1

The following information relative to the accident of aircraft S/N 123 on 24 May 1963 should be added to the accident report, History of Flight section as paragraph 9. It amplifies the sequence of events and aircraft performance as they actually occurred in relation to pilot observations.

The flight until climb entry was as programmed and was confirmed by instrument readings. As the turn over Wendover, Utah, was established, the airspeed portion of the Triple Display Indicator (TDI) increased from an approximate reading of .85 MACH to 1.05 MACH. Investigation and analysis revealed that this was most probably caused by ice blocking the total pressure ports of the pitot static system. To counteract the increased airspeed condition and to gain altitude in order to stay VFR, the pilot placed the aircraft in a 2° climb and reduced power slightly. The aircraft continued the climbing turn for approximately 224° with roll-out completed on a heading of 200° and approximately 37,750 feet altitude. TDI readings just prior to roll-out were 1.05 MACH and 310 KEAS. To establish the climbing turn, the pilot introduced a 2° nose up attitude and 30° of bank on the attitude indicator. As the apparent MACH number increased the MACH TRIM SYSTEM automatically introduced approximately 5° additional nose up trim. (The MACH TRIM SYSTEM automatically reacts to changing MACH numbers on information provided by the Air Data Computor and operates in the transonic region of 0.2 and 1.05 MACH numbers on a schedule of approximately 8° per whole MACH number.)

Aerodynamic analysis engineers have plotted the aircraft to actually be in an approximate 3.7° nose up attitude and about 190 KEAS when the pilot stated he had resumed level flight. Instrument readings at this time were approximately MACH .84 and 290 KEAS. Coincidental with roll-out the airspeed and MACH number indicators began to decrease rapidly from the erroneously high readings and were in fact, returning to normal accurate indications. This was most probably due to clearing of the total pressure ports of the pitot static system.

The angle of attack in conjunction with low airspeed at roll-out was such that the thrust/drag/maximum military power curve were about equal. The sustained angle of attack with only 93 - 94% RPM power setting after roll-out placed the aircraft on the back side of the power curve. With no increase in power the

airspeed continued to decrease; the sink rate increased thereby increasing the angle of attack in relation to the relative wind until the stall and spin occurred.

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NOTE: Ref. [redacted] 9762, 04/2341Z.

Flight test data and engineering analysis reveal that aircraft 123 was not capable of attaining MACH 1.05 for the conditions stated by the pilot. Two flights by LAC test pilots were conducted on aircraft 124 to determine aircraft stability and control effectiveness throughout the entire flight envelope that was encountered on aircraft 123, from apparent normal conditions prior to the turn point at Wendover, Utah, until loss of control and ejection. It was determined that recovery could have been made with no increase in power at any time down to 125 KEAS by use of adequate (in excess of 20° N. D.) nose down elevon control only. On the simulated test a 10° N. Down descent was established at roll-out position with comparative power settings and gross weight with a descent to 25,000 feet. At this point, an indicated airspeed of 377 KEAS and .92 MACH was obtained indicating that this corrective action was in excess of the minimum required as adequate.

The second phase of the flight was to determine airspeed bleed off in a shallow climb with comparative aircraft configuration and altitude. The aircraft attained an altitude of 38,000 feet and 192 KEAS where it was leveled off. With no change in power the airspeed continued to bleed off until it became apparent that altitude or airspeed could not be maintained.

The third phase of the test flights simulated the climbing turn accomplished by aircraft 123 to include a power reduction of 3.5%. Aircraft configuration, altitude and airspeed were approximately those indicated by the pilot of article 123. After 220° of turn, the aircraft reached an altitude of 35,600 feet, airspeed 195 KEAS and .6 MACH number.